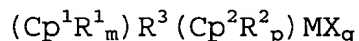


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of the claims in this application.

Listing of Claims:

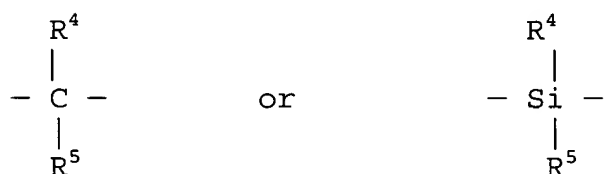
1. (Currently amended) A process for the polymerization of α -olefin to provide a liquid polyalphaolefin ~~polyalphaolefin~~ homo- or copolymer, the process comprising polymerizing at least one olefin in the presence of hydrogen and a catalytically effective amount of catalyst comprising the product obtained by combining a metallocene procatalyst with a cocatalyst, the metallocene procatalyst being at least one compound of general formula:



wherein Cp^1 of ligand $(\text{Cp}^1\text{R}^1_m)$ and Cp^2 of ligand $(\text{Cp}^2\text{R}^2_p)$ are the same or different cyclopentadienyl rings, R^1 and R^2 each is, independently, hydrogen or a hydrocarbyl, halocarbyl, heterocarbyl, hydrocarbyl-substituted organometalloid or halocarbyl-substituted organometalloid group containing up to about 20 carbon atoms, m is 0 to 5, p is 0 to 5 and two R^1 and/or R^2 substituents on adjacent carbon atoms of the cyclopentadienyl ring associated therewith can be joined together to form a ring containing from 4 to about 20 carbon atoms, R^3 is a bridging

group bridging Cp^1 with Cp^2 , M is a transition metal having a valence of from 3 to 6, each X is a non-cyclopentadienyl ligand and is, independently, halogen or a hydrocarbyl, oxyhydrocarbyl, halocarbyl, hydrocarbyl-substituted organometalloid, oxyhydrocarbyl-substituted organometalloid or halocarbyl-substituted organometalloid group containing up to about 20 carbon atoms, and q is equal to the valence of M minus 2, the cocatalyst being an aluminoxane and it being provided that ligand (Cp^1R_m^1) is different than ligand (Cp^2R_p^2) and bridging group R^3 contains at least two bulky groups.

2. (Original) The process of Claim 1 wherein the metallocene procatalyst possesses the structure



in which groups R^4 and R^5 each, independently, is, or contains, a cyclic group of from 6 to about 20 carbon atoms, from 0 to 3 heteroatoms and hydrogen as the remaining atoms.

3. (Original) The process of Claim 2 wherein in the metallocene procatalyst, the cyclic group is a cycloalkyl, heterocycloalkyl, cycloalkenyl, heterocycloalkenyl, aryl, heteroaryl, alkaryl, alkylheteroaryl, aralkyl or heteroaralkyl group.

4. (Original) The process of Claim 3 wherein in the metallocene procatalyst, ligand (Cp^1R_m^1) is unsubstituted cyclopentadienyl, ligand (Cp^2R_p^2) is substituted or unsubstituted indenyl or fluorenyl, M^1 is zirconium, R^4 and R^5 each is phenyl and each ligand X is chlorine.

5. (Original) The process of Claim 1 wherein the metallocene procatalyst based in terms of the transition metal M, is present in an amount from 0.0001 to about 0.02 millimoles/liter and the aluminoxane cocatalyst is present in an amount from 0.01 to about 100 millimoles/liter.

6. (Original) The process of Claim 1 wherein the α -olefin contains from 2 to about 20 carbon atoms.

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Amendment dated June 9, 2004
Reply to the Office Action of March 9, 2004

7. (Currently amended) The process of Claim 1 wherein the α -olefin contains from about 6 to e about 12 carbon atoms.

8. (Original) The process of Claim 1 wherein the α -olefin is 1-decene.

9. (Original) The process of Claim 1 wherein the metallocene procatalyst is combined with the aluminoxane cocatalyst and hydrogen in any order thereof and in the presence or absence of α -olefin.

Claims 10 to 37, (Canceled)